‘68 Custom Deluxe® Reverb

(This is the model name for warranty claims)

p/n 277-4000-000 (120V)

SERVICE MANUAL



ATTENTION:

WARRANTY SERVICE PROCEDURES

The “68 Custom Deluxe® Reverb Amplifier is considered to be field serviceable to the component level. As such stuffed PCB Assemblies are not readily available. Any Fender Authorized Service Center in need of a warranty replacement PCB Assembly for this unit should contact the Fender Customer Service Call Center, and ask to speak to an Electronic Technician. You will be given instructions on how to proceed with the repair at that time. Contact the Call Center by phone at (866) 345-3642 or by email at service@fender.com.

Fender Musical Instruments Corporation, 17600 North Perimeter Drive, Suite 100, Scottsdale, AZ 85255-5440
Issued: October, 2013

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'68 Custom Deluxe® Reverb

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- Parts marked with two asterisks (**) indicate the required use of that specific part. This is necessary for RELIABILITY and SAFETY requirements. **DO NOT USE A SUBSTITUTE!**

PARTS LIST CODES

The description codes used in the itemized Parts Lists are defined below:

CAPACITOR CODES

CAP AE	=	Aluminum Electrolytic
CAP CA	=	Ceramic Axial
CAP CD	=	Ceramic Disk
CAP CR	=	Ceramic Radial
CAP MPF	=	Metalized Polyester Film
CAP MY	=	Mylar
CAP PFF	=	Polyester Film/Foil

RESISTOR CODES

RES CC	=	Carbon Comp
RES CF	=	Carbon Film
RES FP	=	Flame Proof
RES MF	=	Metal Film
RES MOX	=	Metal Oxide
RES WW	=	Wire Wound

HARDWARE CODES

BLX	=	Black Oxide
CR	=	Chrome Plated
HWH	=	Hex Washer Head
M	=	Machine Screw
NI	=	Nickel Plated
OHP	=	Oval Head Phillips
PB	=	Particle Board
PHP	=	Pan Head Phillips
PHPS	=	Pan Head Phillips Sems
SMA	=	Sheet Metal "A" Point
SMB	=	Sheet Metal "B" Point
SS	=	Stainless Steel
TF	=	Thread Forming
ZI	=	Zinc Plated

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SPECIFICATIONS

Model Name:	**68 Custom Deluxe Reverb**	
Release Number:	**PR 239**	
Part Numbers	**68 CUSTOM DELUXE REVERB 120V**	**227-4000-000**
	68 CUSTOM DELUXE REVERB 110V TW	**227-4001-000**
	68 CUSTOM DELUXE REVERB 240V AUS	**227-4003-000**
	68 CUSTOM DELUXE REVERB 230V UK	**227-4004-000**
	68 CUSTOM DELUXE REVERB 230V ARG	**227-4005-000**
	68 CUSTOM DELUXE REVERB 230V EUR	**227-4006-000**
	68 CUSTOM DELUXE REVERB 100V JP	**227-4007-000**
	68 CUSTOM DELUXE REVERB 220V ROK	**227-4009-000**
Power Requirement:	**100 W**	
Fuses:	**F 2A, 250V for 100V versions**	
	F 2A, 250V for 120V versions	
	F 1A, 250V for 230V versions	
	F 1A, 250V for 240V versions	
Input Sensitivity:		
Input 1 High Level	**10 mV – volume at maximum for 22 watts power. Tone controls centered.**	
Input 2 Low Level	**20 mV – volume at maximum for 22 watts power. Tone controls centered.**	
Power Output:	**22W RMS into 8 ohms @ < 10%THD, 1000Hz**	
Input Impedances	**>1M Ohms**	
Speaker Complement:	**12", 8 ohm**	
Dimensions	**Height: 17 1/2 in**	**(44.5 cm)**
	Width: 24 1/2 in	**(62.2 cm)**
	Depth: 9 1/2 in	**(24.1 cm)**
Weight:	**42 lbs (19.05 kg)**	

Product specifications are subject to change without notice

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SERVICE NOTES

CHASSIS REMOVAL is accomplished by first removing the four (4) screws from the rear upper panel. Unplug the white and red plugs on the Reverb cable from the Reverb Input and Output respectively and also the Internal Speaker Output cable. Now remove the two screws (4 total) screws on the left and right nickel plated chassis straps on the cabinet top. Pull the screws completely out of the cabinet. The chassis can now slide out to the rear, giving access to the electronics.

PCB EXCHANGE POLICY

Parts marked with a single asterisk (*****) in the Part Lists are not field replaceable. If a failure due to one of these components is detected, please contact the FMIC Customer Service Department to order the complete PCB Assembly.

CIRCUIT DESCRIPTION

This section provides concise information about new or unusual circuitry designs incorporated into this amplifier model. The purpose is to aid the service technician by providing insight into the design areas most likely to become obstacles in troubleshooting. Information is focused for its effective use while maintaining the security of Fender® proprietary information wherever possible.

PRE-AMPLIFIER/REVERB

The preamplifier is configured in two parallel sections – the Custom channel preamp & the Vintage channel preamp.

For the Custom channel, the guitar signal is input to J1 for high gain and J2 for lower gain. When both inputs are used in a single channel, both signals receive low gain. V1-A provides a single gain stage that drives the tone stack. The Vintage channel tone stack is composed of R7 and R8 and associated components provide treble and bass tone control respectively. R10 provides volume control. V1-B provides gain lost in the tone stack.

For the Vintage channel, the guitar signal is input to J3 for high gain and J4 for lower gain. When both inputs are used in a single channel, both signals receive low gain. V2-A provides a single gain stage that drives the tone stack. The tone stack composed of R19 and R20 and associated components provide treble and bass tone control respectively. R22 provides volume control. V2-B provides gain lost in the tone stack.

The plates of V1-B and V2-B are tied in common. This configuration allows both channels to utilize the Reverb effect.

The output from V1-B & V2-B are fed via C12, creating a high pass response to the REVERB drive amplifier V3. The REVERB pan is driven by impedance matching transformer T1. The output of the spring reverb signal is recovered and amplified by V4-A. The V1-B & V2-B signal also couples to the V4-B intermediate gain stage. This is the dry signal which mixes with the wet Reverb signal at the grid of V4-B.

TREMELO

V5-A is an R-C phase shift oscillator configured in a classic vintage tube configuration. The oscillator rate is controlled by SPEED control R42 in the first leg of the phase shift network. The rate varies from approximately 0.5 Hz to 5 Hz. V5-B amplifies the oscillator output so that it drives either 1) the OP1 LDR opto-coupler assembly (for all non-European models), or 2) the RoHS-approved LDR replacement PCB Assy (for European models). This circuit modulates the input impedance of the non-inverting input of the tube power amp. The modulating level is adjusted with the INTENSITY control R48. This

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impedance modulation varies the effective input level that drives the power amplifier.

POWER AMPLIFIER

Phase splitter V6-A&B is configured in a differential long tailed pair topology with V4-B driving the non-inverting input and the feedback from the speaker output attached to the inverting input. Output from the V6-A drives the upper power amp tube V7. Output from the V6-B drives the lower power amp tube V8. V7 and V8 act as a push-pull pair in the tube class A-B power amplifier. T2 matches the 6L6 plate impedances to the speaker load.

POWER SUPPLY

The line voltage is fed to T3's primary through the line fuse, F1, and the inrush current limiter, TH1. The red secondary output is full-wave rectified by dual vacuum tube diode V9 and filtered to produce the 415V (B+), 406V (Z), 324V (Y), and 270V (X) DC supply voltages for the power and preamp tubes.

A 6.3VAC secondary (green) powers the power indicator lamp and the preamp & power amp tubes' heaters.

The rectifier diode filament is supplied by a separate 5.4 VAC secondary winding (yellow).

Negative bias for the output tubes is supplied by the solid state half-wave rectifier CR1, a resistive divider circuit (R69, R58 and R59), and two filter capacitors (C36 & C29). R58 is used to adjust the output tube stage bias voltage to nominally set the V7 & V8 idle currents at 24 mA for each.

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PARTS LIST:	**PCB ASSEMBLY**		
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0020883002	CAP CD 10pF 1000V 10%	C13
2	0020917002	CAP CD 250pF 1000V 10%	C2 C7
1	0020842002	CAP CD 500pF 1000V 10%	C14
3	0027413000	HDR .1 CTR 6 CKT SQ PIN	P21A P22A P23A
1	0037666002	CAP PFF .001uF 400V 10%	C25
1	0037040002	CAP PFF .0033uF 400V 10%	C17
2	0024823000	CAP MPF RDL.01uF 400V 10%	C20-21
3	0024833000	CAP MPF RDL .022uF 400V 10%	C4 C12 C22
1	0024845000	CAP MPF RDL .047uF 400V 10%	C9
3	0024854000	CAP MPF RDL .1uF 400V 10%	C3 C8 C18
1	0024853000	CAP MPF RDL.1uF 250V 10%	C26
2	0024855000	CAP MPF RDL .1uF 630V 10%	C27-28
1	0038691001	CAP AE AX 4.7uF 50V 20%	C19
7	0009512001	CAP AE AX 22uF 25V 20	C1 C6 C11 C15-16 C23-24
3	0024819000	CAP AE AX 22uF 500V +50%-10%	C33-35
1	0041705000	CAP AE AX 220uF 100V 20%	C31
1	0041589000	CAP AE AX 47uF 500V +50%-10%	C32
1	0036954000	CAP AE RDL 22uF 63V 20%	C29
1	0031040000	CAP AE RDL 100uF 100V 20%	C36
1	0024986001	RES CF 1/4W 18k 5%	R72
1	0027749001	RES MF FUSE 1/4w 5% 22ohm T/R	R69
1	0024947001	RES CF 1/4W 47ohm 5%	R53
1	0024961001	RES CF 1/4W 470ohm 5%	R51
2	0024964001	RES CF 1/4W 820ohm 5%	R24 R30
5	0024969001	RES CF 1/4W 1.5k 5%	R5 R17 R60-61 R64
1	0024972001	RES CF 1/4W 2.7k 5%	R44
2	0024979001	RES CF 1/4W 6.8k 5%	R9 R21
1	0024981001	RES CF 1/4W 10k 5%	R36
4	0024995001	RES CF 1/4w 68k 5%	R1-2 R13-14
3	0024997001	RES CF 1/4W 100k 5%	R6 R18 R41
5	0025059001	RES CF 1/4W 220k 5%	R28 R33 R35 R56-57
1	0025063001	RES CF 1/4W 390k 5%	R37
1	0025073001	RES CF 1/4W 1.5M 5%	R32
7	0025069001	RES CF 1/4W 1M 5%	R3 R15 R26 R39-40 R49 R52
1	0025075001	RES CF 1/4W 2.2M 5%	R38
1	0025077001	RES CF 1/4W 3.3M 5%	R25
1	0025084001	RES CF 1/4W 10M 5%	R45
2	0026368001	RES CF 1/2W 100ohm 5%	R70-71
2	0025832001	RES CF 1/2W 22k 5%	R50 R59
9	0025116001	RES CF 1/2W 100k 5%	R4 R11 R16 R23 R29 R34 R46-47 R65
1	0025117001	RES CF 1/2W 220k 5%	R43
1	0027347001	RES FILM 1W 2.2k 5%	R27

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + ***** Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

****** Safety Requirement part. Replacement must match Safety Agency…–*Value,* if specified –*Type,* if specified –*Approval Mark(s)* if on part.

shaded + ****** Both a unique Fender® part and a Safety Requirement part as defined above.

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PARTS LIST: PCB ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0037619001	RES FILM 1W 82k 5%	R54
1	0027353001	RES FILM 1W 100k 5%	R55
1	0041706001	RES FILM 1W 470k 5%	R66
2	0036468001	RES MOX FP 1W 470ohm 5%	R62-63
2	0036470001	RES MOX FP 1W 10k 5%	R67-68
1	0064089001	DIODE 1N4003	CR1
1	0037602000	CONTROL SNAPIN 50k 30C TAPER	R48
1	0037600000	CONTROL SNAPIN 100k B TAPER	R31
2	0037599000	CONTROL SNAPIN 250k 10A TAPER	R8 R20
2	0037597000	CONTROL SNAPIN 250k 30A TAPER	R7 R19
2	0037596000	CONTROL SNAPIN 1M 30A TAPER	R10 R22
1	0037601000	CONTROL SNAPIN 3M 10C TAPER	R42
23	0026000001	FSTN TAB MALE PCB MT .187X.032	CP1-23
1	0037836000	OPTOISOLATOR ASSY 65 TWIN	OP1
4	0037117000	JACK PCB MONO CLOSED CKT	J1-4
1	0025933000	JACK PHONO DUAL PC MTG	J5
2	0031901000	PIN MALE PCB .093 DIA.	SP1-2
1	0028503000	**THERMISTOR 10 ohm 5A C60-11	TH1
1	0017502000	CONTROL 10K LIN SCREW ADJ	R58
1	0013043000	JACK PHONE STEREO 12B	J6
2	0020775000	**FUSE CLIP PCB 5mm	@XF2

PARTS LIST: CHASSIS ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	5550112391	TUBE 7025/12AX7A GT-ECC83-S	V1, V2, V4, & V5
2	5550112400	TUBE 12AT7 GT-ECC81-S	V3 & V6
1	0069673000	TUBE 5AR4 FULLWAVE RECTIFIER	V9
1	5550113521	TUBE GT-6V6-S MED. DUET MATCHED	V7 & V8
1	0013681000	**FUSE TD 20mmx5mm 250v 5A	XF2 (FILAMENT FUSE ON PCBA)
7	0016352000	NUT HEX 3/8-32x3/32 TK NI	
4	0018022000	BUSHING SNAP 5/16x17/32 BLK	
3	0020424000	**TUBE RING UNIVERSAL (277H-2)	V7 – V9
1	0021550000	JACK PHONE TIP SHUNT 12A	
1	0055033000	JEWEL PILOT LITE BLUE #20	
1	0021642000	PILOT LIGHT #T47	
1	0021741000	HOLDER IDAL LITE ASSY PILOT	
1	0021956000	JACK PHONE OPEN CIRCT 11	
1	0031625000	NUT HOLDER PILOT LIGHT 11/16-27	
1	0032219000	COLLAR-PILOT LIGHT	
4	0022004000	NUT KEPS #8-32 ZINC	
1	0022707000	**CHOKE FILTER	L1
3	0023580000	TUBE SCKT 8 PN	V7 – V9
6	0023598000	**TUBE SHIELD	V1 - V6

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

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PARTS LIST: CHASSIS ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
6	0023606000	TUBE SOCKET 9 PIN	V1 – V6
9	0024604000	KNOB BLK W/WIHITE STAMP 1-10	FRONT PANEL CONTROLS
14	0025936000	STANDOFF NYL PCB SNAP 3/8	FOR PCB ASSY MOUNTING
1	0026038000	**BUSHING SR .625x.062x37/64 BLK	SECURES POWER CORD (120V/100V)
1	0010401000	**BUSHING SR .625x.125x37/64 WHT	SECURES POWER CORD (220V-240V)
1	0026438000	PLUG BUTTON .437" BLACK #2633	
1	0026541000	**CORD PWR ASSY W/.250 TAB 120V	DOMESTIC
1	0033331000	**CABLE ASSY PWR 220/240v	230V EUROPE
1	0038602000	**CABLE ASSY PWR AUST .250 TAB	240V AUSTRALIA
1	0048463000	**CABLE ASSY PWR .250 100v	100V JAPAN
1	0040993000	**CABLE ASSY PWR 5A U.K.250 TAB	230V U,K.
14	0028937000	SCRW TF 6-32x5/8 PHP ZI	
1	0030758000	SCRW HI-LO 6-20x3/8 PHP ZI	AT REVERB JACK ASSY
1	0036570000	**SWITCH TOGGLE DPST W/NUTS	POWER SWITCH
1	0036702000	**FUSE HOLDER 3AG FINGER GRIP	120V & 100V MAINS FUSE HOLDER
1	0036703000	**FUSE HOLDER 5MM FINGER GRIP	220V-240v MAINS FUSE HOLDER
1	0037039000	**SWITCH TOGGLE SPST W/NUTS	STANDBY SWITCH
1	0037099000	**XFMR REVERB	
1	0037300000	**COVER CAPACITOR	
29	0038900000	SCRW TF 6-32X1/4 PHP ZI	
1	0098972000	*PANEL FRONT 68 DLX	
1	0099656000	*PANEL REAR 68 DLX	
1	0041316000	**XFMR PWR DELUXE REVERB 120v	FOR DOMESTIC
1	0041317000	**XFMR PWR EXPORT - 65 DLX REVERB	FOR ALL EXPORTS
1	0041318000	**XFMR OUTPUT 65 DELUXE REVERB	
1	0048827000	**FUSE QA 1-1/4x1/4 250v 2A	LINE FUSE – 120V/100V
1	0020789000	**FUSE QA 20mmx5mm 250v 1A	LINE FUSE – 220V-240V
4	9904300100	WASHER LCK INTL 3/8x.681x.032	
1	0032806000	SCRW TF 6-32x1/4 PHP BLX	
2	0057161000	**BOOT TOGGLE SWITCH GREY .844 H	COVERS TOGGLE SWITCHES
1	0073575000	*PCB ASSY TREMOLO POWER	230V EUROPE & UK ONLY
1	0073578000	*PCB ASSY LDR REPLACEMENT TREMOLO	230V EUROPE & UK ONLY
4	0039367000	SCRW M6-32X3/8 PHP SS INTLWSHR	230V EUROPE & UK ONLY
1	0024981001	RES CF 1/4W 10k 5%	ALL NON-DOMESTIC FOR EMC
1	0051406003	CAP CD 220pF 500V 10%	ALL NON-DOMESTIC FOR EMC
1	0012869000	LUG SOLDER BRONZE TINNEDW/2 HL	ALL NON-DOMESTIC FOR EMC
1	0051158000	NUT #6 SMALL PATTERN	ALL NON-DOMESTIC FOR EMC
1	0013043000	JACK PHONE STEREO 12B	

PARTS LIST: CABINET ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0098989000	*CAB ASSY 68 DLX	

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + ***** Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

****** Safety Requirement part. Replacement must match Safety Agency…–*Value,* if specified –*Type,* if specified –*Approval Mark(s)* if on part.

shaded + ****** Both a unique Fender® part and a Safety Requirement part as defined above.

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PARTS LIST: CABINET ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0098989002	*CAB ASSY 68 DLX UPPER BACK	
1	0098989003	*CAB ASSY 68 DLX LOWER BACK	
1	0026570000	TOLEX "BRAVURA BLACK" BRONCO	
1	0098989001	*GRILLE ASSY 68 CUSTOM DLX	COMPLETE GRILLE ASSEMBLY
2	0021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	SECURES HANDLE
2	0022244000	SCRW M 10-32x1-1/8 OHP NI	SECURES HANDLE
2	0025395000	HANDLE CAP 1 HOLE NI (DWG17420)	
1	0032524000	HANDLE REINFORCEMENT STEEL	
1	0037790000	HANDLE BLACK RIBBED 9.25"	
4	0029527000	WSHR FNSH 8-5/8 FLNGD BLX WX	GRILLE ASSY TO FRONT CLEATS
4	0011678000	SCRW SMA 8x1-1/2 OHP BLX	GRILLE ASSY TO FRONT CLEATS
4	0041549000	GLIDE CUP PRESS-IN NI PLATED (0.75 DIA)	
4	0021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	SECURES SPEAKER
.5	0098990000	CLOTH GRILLE BLACK/SILVER/BLUE	

PARTS LIST: END ITEM ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	0024745000	STRAP CHASSIS 4" NICKEL	
4	0022236000	SCRW M 8-32x3-1/4 OHP NI CP	USE WITH CHASSIS STRAP
2	0022327000	WSHR FLAT 8x7/16 NI	USE WHEN SECURING CLAMPS
7	0029828000	SCRW PB 8x3/4 PHP ZI	REAR OF CHASSIS TO CABINET
2	0022491000	CLAMP CABLE NYL SCRW MNT 5/16	POWER CORD & REVERB CABLE
1	0025722000	CABLE REVERB 1100mm	
1	0028453000	PAD CARDBOARD REVERB #12FN86	
1	0031849000	REVERB BAG	
1	0064063000	REVERB UNIT 4 SPRING 4AB3C1B	
1	9906900590	CLAMP CABLE NYL ADHESIVE	SECURES CABLE INSIDE REVERB BAG
1	0994058000	FOOTSWITCH 2 BTN VIB/REV ASSY	COMPLETE FOOTSWITCH
8	0037215000	WSHR C/SUNK NICKEL #6	SECURES CABINET REAR PANELS
8	0037952000	SCRW SMA #6x1 OHP NI	SECURES CABINET REAR PANELS
1	0023192000	*NAMEPLATE FNDR 65 TWIN	
3	0037985000	SCRW SMA 2x3/8 PHP BLX	SECURES LOGO ON GRILLE
1	0098989000	*CAB ASSY 68 DLX	
1	7700343000	SPKR 12" 8ohm 70W T5901AX60	
4	0047821000	SCRW M 10-32 3/4 THP STL BLX	SECURES SPEAKER TO BAFFLE
1	0038566000	CABLE ASSY SPKR RT ANG 13-1/2"	CONNECTS TO INTERNAL SPKR JACK
1	0047585000	**COVER TUBE 65 DLX REVERB	SAFETY ITEM
2	0025743000	SCRW M 10-32x1/2 PHP BLX	TUBE COVER TO UPPER REAR PANEL
1	0059848000	**FERRITE CORE EMI SUPRES 80 OHM	NON-DOMESTIC REVERB CABLE
1	0012582000	CLAMP CABLE NYL SCRW MNT 1/4	NON-DOMESTIC FOR REVERB CABLE

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + ***** Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

****** Safety Requirement part. Replacement must match Safety Agency…–*Value,* if specified –*Type,* if specified –*Approval Mark(s)* if on part.

shaded + ****** Both a unique Fender® part and a Safety Requirement part as defined above.

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PARTS LIST:	**FOOTSWITCH ASSY**		
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0994058000	FOOTSWITCH ASSEMBLY 2 BTN VIB/REV	
1	0013172000	PLUG PHONE 3 CONDUCTOR 238 RA	
2	0024042000	SWITCH SPST PUSH BUTTON	

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

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Service Diagram List

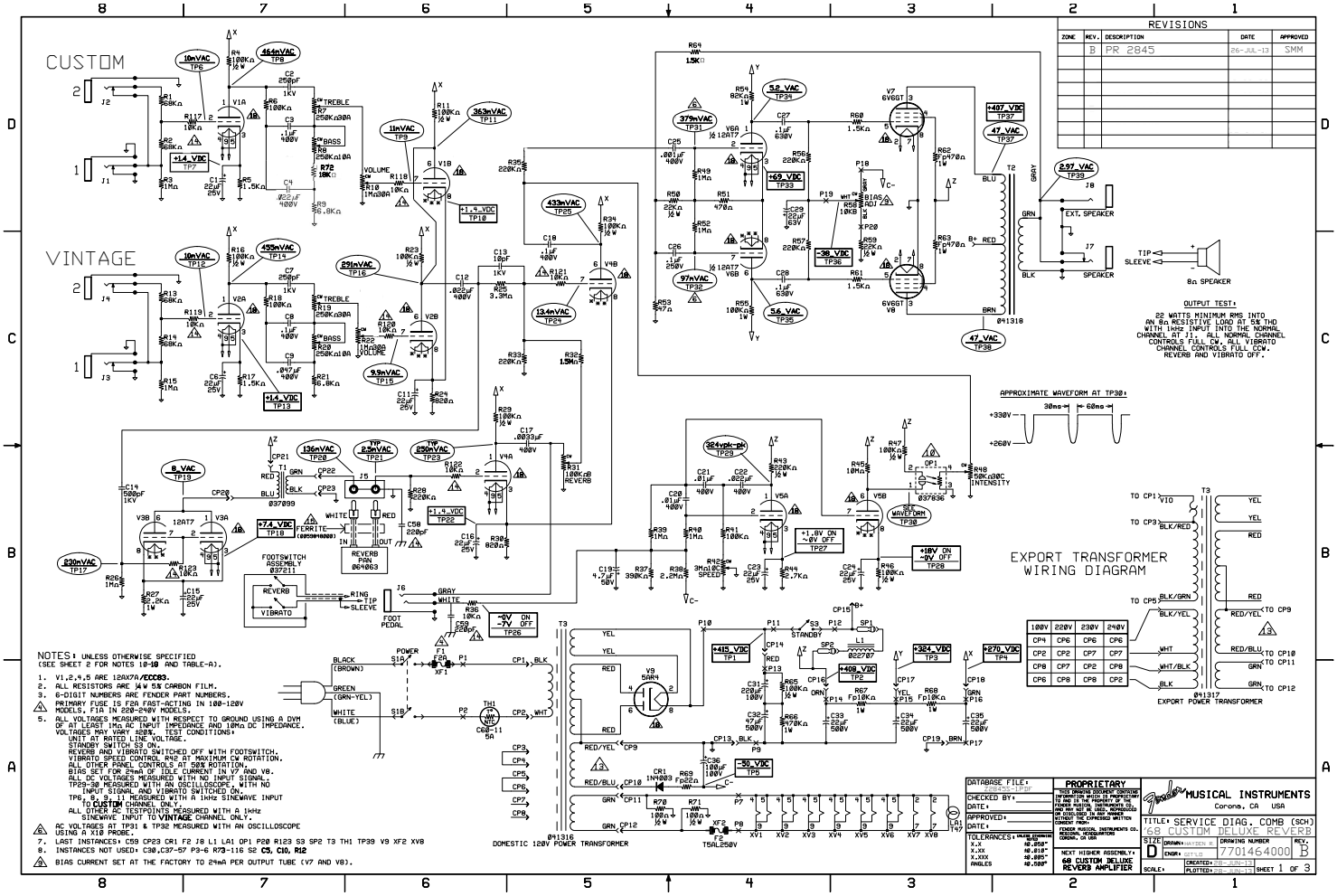
Service Diagram (Schematic)…….....‘68 CUSTOM DELUXE® REVERB PCB

Service Diagram (PCB Assembly)……. ‘68 CUSTOM DELUXE® REVERB PCB

Solid State Tremolo (Schematic-Export Only)……..’68 CUSTOM DELUXE® REVERB PCB

Solid State Tremolo Power Supply (Schematic-Export Only).…’68 CUSTOM DELUXE® REVERB PCB

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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	B	PR 2845	24-JUL-13	SMM

NOTES: (CONTINUED FROM PAGE 1)

/!\12. OP1 IS NOT INSTALLED ON EUROPEAN AND UK PCA **099481**.
11. THIS DRAWING IS FOR PCA'S **099480** AND **099481**.
12. SPECIAL RoHS COMPLIANT PCA'S (073575 & 073578) ARE WIRED IN PLACE OF OP1 ON ASSY **099481**.
/!\13. REFERENCE 073589 - WIRE SET 65 DELUXE TREMOLO 230V EUR/UK.
FOR PCA **099481**, WIRE NEGATIVE BIAS CIRCUIT PER TABLE-A.

/!\14. COMPONENTS INSTALLED AT CHASSIS ASSEMBLY FOR NON-DOMESTIC MODELS ONLY.

/!\15. FERRITE INSTALLED AT FINAL ASSEMBLY FOR NON-DOMESTIC MODELS ONLY.
FERRITE PART NUMBER IS 0059848000.
WRAP 5 TURNS OF THE REVERB CABLE THROUGH THE CENTER OF OF TOROID AND SHRINK SLEEVE (P/N 0016428000).

/!\16. **COMPONENTS NOT INSTALLED ON 68 CUSTOM DELUXE PCB ASSEMBLIES (0099840000 AND 0099841000): C5, C10, R12.**

TABLE-A /!\13

COLOR	FROM	TO
RED/YEL(ROJ/AMA)	XFMR 041317-T3	PCA 073575-WJ9
RED/BLU(ROJ/AZL)	XFMR 041317-T3	PCA 073575-WJ8
ORN(NAR)	PCA 073575-WJ7	PCA 073509-CP10
YEL(AMA)	PCA 073575-WJ1	PCA 073509-CP9

/!\17. **R72 INSTALLED ON SOLDER SIDE OF PCB NEAR R8 (BASS CONTROL).**

/!\18. **TUBE COMPLEMENT (INSTALLED AT PRODUCTION):**
V1: ECC83S - GT (0074207200)
V2: ECC83S - GT (0074207200)
V3: ECC81S - GT (0078779200)
V4: ECC83S - GT (0074207200)
V5: ECC83S - ST (0074207300)
V6: ECC81S - GT (0078779200)
V7: 6V6 - S (0069673000)
V8: 6V6 - S (0069673000)
V9: 5AR4 (0041400000)

DATABASE FILE: 68DLXRVB.SCH
CHECKED BY:
DATE:
APPROVED:
DATE:
TOLERANCES: UNLESS OTHERWISE SPECIFIED
X.X ±0.050"
X.XX ±0.010"
X.XXX ±0.005"
ANGLES ±0.500°

PROPRIETARY
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FENDER MUSICAL INSTRUMENTS CO.
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CORONA, CA USA

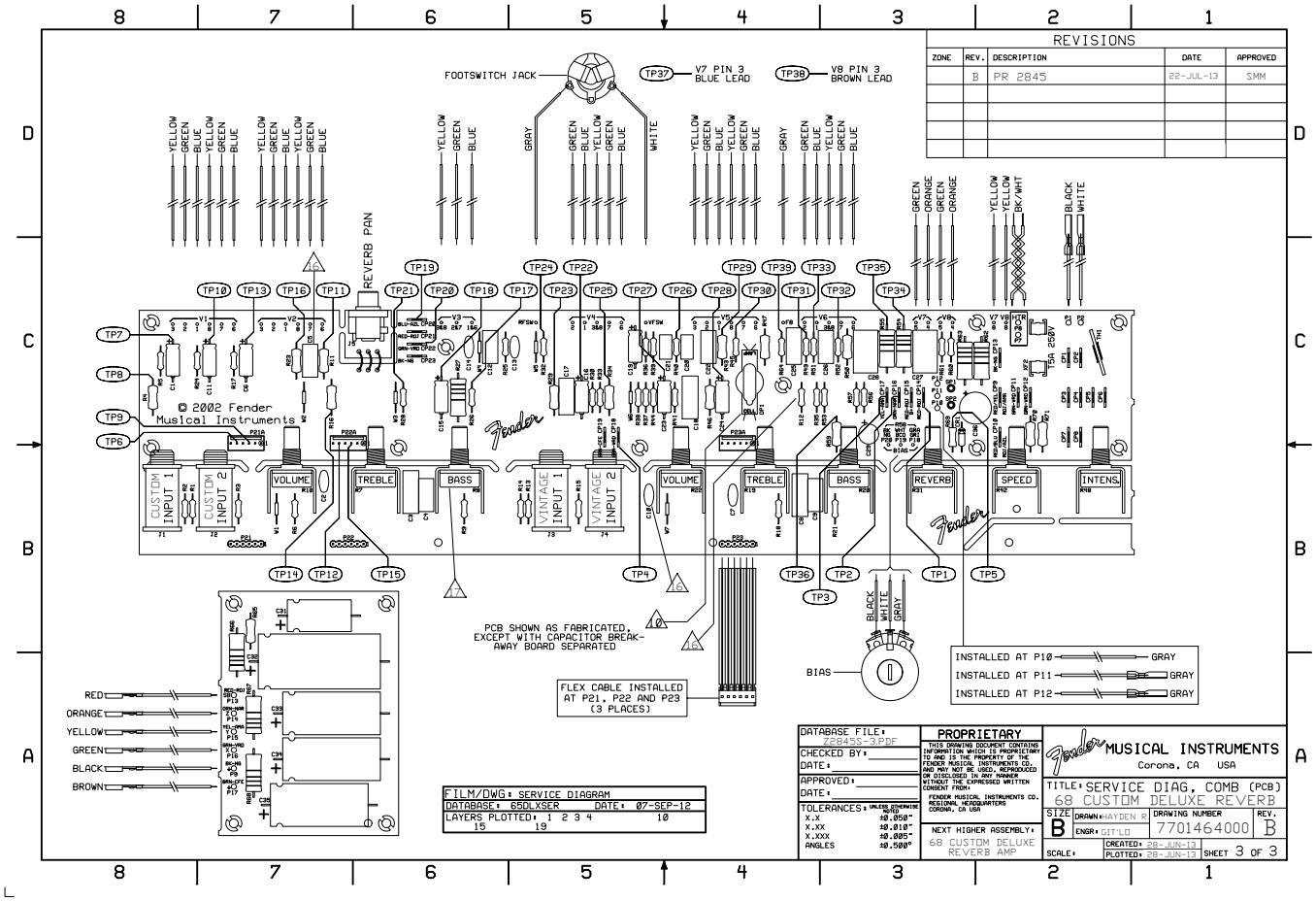
NEXT HIGHER ASSEMBLY:
68 CUSTOM DELUXE REVERB AMPLIFIER

FENDER MUSICAL INSTRUMENTS
Corona, CA USA

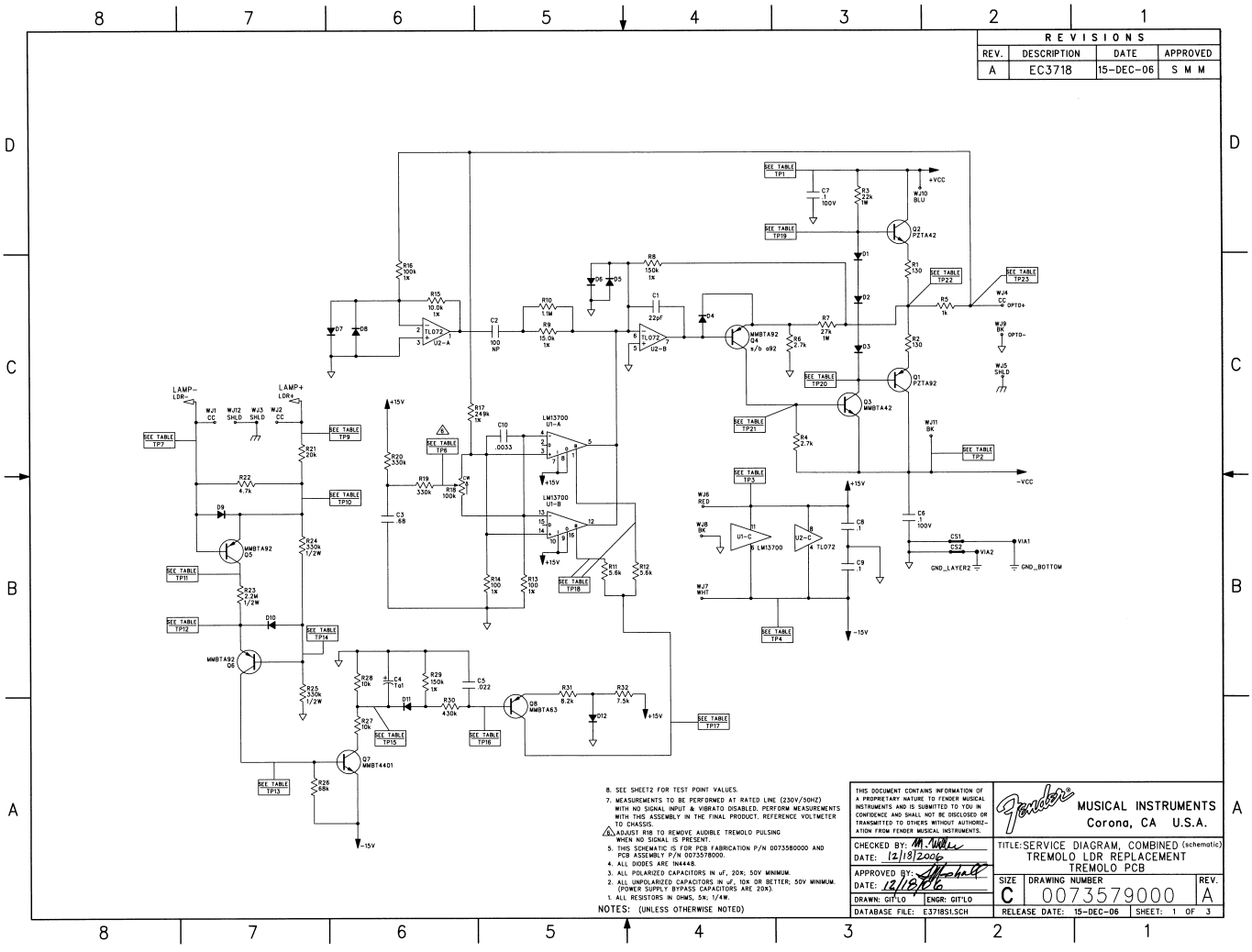
TITLE: SERVICE DIAG, COMB (SCH.)
68 CUSTOM DELUXE REVERB

SIZE: D | DRAWN: HAYDEN C | DRAWING NUMBER: 7701464000 | REV: B
ENGR: | SCALE: | CREATED: 27-JUN-13 | PLOTTED: 27-JUN-13 | SHEET 2 OF 3

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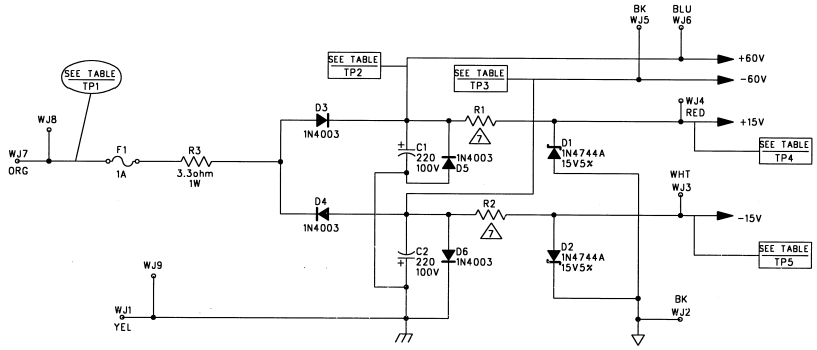


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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	EC3717	23-JAN-07	S M M



MODEL	TP1	TP2	TP3	TP4	TP5
65 TWIN REVERB	50 Vrms	+65.8 Vdc	-65.7 Vdc	+15.5 Vdc	-15.9 Vdc
65 DELUXE REVERB	37 Vrms	+48.3 Vdc	-48.3 Vdc	+15.2 Vdc	-15.4 Vdc
65 SUPER REVERB					
CUSTOM VIBROVERB					
CUSTOM VIBRO-KING					

NOTES: (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS IN OHMS, 5%; 1/4W.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V MINIMUM.
4. ALL DIODES ARE 1N4448.
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0073577000 AND PCB ASSEMBLIES P/N 0073575000 & 0074184000.
6. ALL TEST VOLTAGES TAKEN WITH VOLTMETER REFERENCED TO THE CHASSIS. NO AC SIGNALS APPLIED TO INPUT. VIBRATO IS OFF. AC LINE SET TO 230V, 50HZ.

⚠7 R1 & R2 VALUE FOR PCB ASSY 0073575000 is 1.5k/5W.
R1 & R2 VALUE FOR PCB ASSY 0074184000 IS 3.3k/5W.

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DATE: 2/2/07
APPROVED BY: [signature]
DATE: 2/2/07
DRAWN: GIT'LO | ENGR: GIT'LO
DATABASE FILE: E3717S2.SCH

Fender® MUSICAL INSTRUMENTS
Corona, CA U.S.A.

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
TREMOLO POWER

SIZE	DRAWING NUMBER	REV.
B	0073576000	B

RELEASE DATE: 18-DEC-06 | SHEET: 1 OF 2

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